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10/676,800	09/26/2003	Margaret Ann Bernal	SVL920030038US1	2626

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EXAMINER	
MYINT, DENNIS Y	

ART UNIT	PAPER NUMBER
2162	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/676,800	**Applicant(s)** BERNAL ET AL.
	Examiner Dennis Myint	**Art Unit** 2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _27 June 2006_.

2a)☒ This action is **FINAL**. 2b)□ This action is non-final.

3)□ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-38_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)□ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-38_ is/are rejected.

7)□ Claim(s) _____ is/are objected to.

8)□ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)□ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _26 September 2003_ is/are: a)☒ accepted or b)□ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)□ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)□ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)□ All b)□ Some * c)□ None of:

1.□ Certified copies of the priority documents have been received.

2.□ Certified copies of the priority documents have been received in Application No. _____.

3.□ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) □ Notice of References Cited (PTO-892)

2) □ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _09/26/2003_.

4) □ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) □ Notice of Informal Patent Application (PTO-152)

6) □ Other: _____.

DETAILED ACTION

1. This communication is responsive to Applicant's Amendment, filed on 27 June 2006.

2. Claims 1-38 are pending in this application. Claims 1, 10, 19, 29, 37, and 38 are independent claims. In the Amendment filed on 27 June 2006, claims 1, 10, 19, 28, and 38 were amended. This office action is made final.

Response to Arguments

3. Applicant's arguments filed on 30 May 2006have been fully considered but they are not persuasive.

Referring to claim 1, Applicant argued that *the Kaluskar patent compares a SQL statement with another SQLstatement (Col. 4, line 2,. FIG. 2, block 210 "matching SQL text") instead of comparing data in an application structure received with the statement with optimization information in a bind-in structure (e.g., Specification, page 12, paragraph 39,. Fig. 4). Also, the Kaluskar patent describes that the comparison of SQL statements is done during a soft parse because they are trying to reduce the expense of compilation involved in processing SQL statements (Col. 3, lines 44-45). Such processing during compilation teaches away from the claimed comparison made when executing a statement. Also, there is no teaching or suggestion in the Kaluskar patent of performing a comparison when performing bind-in of host variables. Because the Kaluskar patent does not teach or suggest the claimed comparison, Applicants* *respectfully submit that the Kaluskar patent does not teach or suggest, when there is a match between the data in the application structure and data in the optimization information in the bind-in structure, executing the statement with the optimization information* (Applicant's argument, Page 10).

In response, it is pointed out that the applicant's argument that *Kaluskar patent compares a SQL statement with another SQLstatement (Col. 4, line 2,. FIG. 2, block 210 "matching SQL text") instead of comparing data in an application structure received with the statement with optimization information in a bind-in structure* is not valid. In the first place, two main concepts of the claimed invention must be clarified. Those are (1) host variables and (2) parameter binding.

In the background section of the applicant's specification, a host variable is commonly defined in the art as follows: *A host variable is a variable that is referred to by embedded SQL statement in a host (e.g. a client) application program (client application). Host variables may be used in the application program to transmit data between tables in a database and application program work areas. A host variable is an array in which each element of the array contains a value for the same column* (Paragraph 0007 of the Applicant's specification). In the background section of the applicant's specification, parameter binding is commonly defined in the art as follows: *The term parameter binding refers to a process of validating, converting, and moving data either to or from an application program input or output parameters* (Paragraph 0007 of the Applicant's specification).

From the above definition of host variable, it is evident that every SQL statement carries host variables to transport between tables in a database and application program work areas. Therefore, when the method of Kaluskar issues SQL statements to transfer data between a database and an application program, said host variables (arrays, which are structures) are automatically included with the SQL statements because SOL language automatically creates those host variables for every SQL statement. When the method of Kaluskar compares the SQL statement, which is presently being processed, with an existing cursor, which corresponds to a first SQL statement (Kaluskar, Column 3 Line 65 through Column 4 Line 6), said method is effectively comparing *"data in an application structure received with the statement* (i.e., host variables) *with optimization information"* because said method is comparing those host variable (i.e., *data in an application structure received with the statement)* with optimization information (i.e., matching an existing cursor, which corresponds to a first SQL statement, and, if said existing cursor exactly matches to the current SQL statement, reusing the execution plan of the executing cursor). Therefore, the method of Kaluskar does teach limitation of claim 1 "*comparing data in an application structure received with the statement with optimization in a bind-structure".*

What the method of Kaluskar does not explicitly teach is the limitation "when performing a bind-in of host variables". Referring to the definition of *parameter binding* above, it is pointed out that parameter binding involves *a process of validating, converting, and moving data either to or from an application program input or output parameters.* The method of Kaluskar does not explicitly recite parameter binding as defined herein. Even though Kaluskar teaches optimization (reusing execution plans), the method of Kaluskar does not recite parameter binding (validation and type conversion. However, said limitation of *performing a bind-in of host variables* (i.e. validation and type conversion) is taught by Crone. Crone teaches validation and type conversion in column 5 Lines 24-57).

Therefore, Kaluskar in view of Crone teaches all the imitations of claim 1 and applicant's argument regarding claim 1 are invalid. For more details on how Kaluskar in view of Crone teaches said limitation, please refer to the section below on claim 1.

Regarding the applicant's argument referring to the Crone patent that *A function module that converts data types does not teach or suggests the claimed optimization information in a bind-in structure* (Applicant's argument, Page 10), please refer to the above-state response to applicant's arguments regarding claim 1, which clearly states that Crone's method teaches *validation and type conversion (*for parameter binding*),* which the method of Kaluskar does not explicitly disclose.

As such rejection of claims 19, 37, 10, 28, and 38 stand firm because Kaluskar in view of Crone teaches all the limitations of claim 1. Similarly, rejection of any other dependent claims still remains rejected.

Applicant also argued that Desai and Jordan II do not cure the defects of the Kaluskar and Crone (Applicant's argument, Page 11). As stated, because there is no defect at all as regards to Kaluskar in view of Crone, references to Desai and Jordan II are valid and appropriating in rejecting respective claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 1-4, 9-13, 18-22, 27-31, 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaluskar et al., (hereinafter "Kaluskar") (U.S. Patent Number 6985904) in view of Crone et al., (hereinafter "Crone") (U.S. Patent Number 6249783).

Referring to claim 1, Kaluskar is directed to a method and system for reusing execution plans and cursors and teaches the limitations:

"when executing a statement, comparing data in an application structure received with the statement with optimization information in a bind-in structure" (Column 3 Line 65 through Column 4 Line 6, i.e. *In this approach, the matching step 210 of Fig. 2 is a* *accomplished if an existing cursor corresponds to a first SQL statement that exactly matches the SQL statement presently being processed* and Column 3 Line 39-45, i.e., *The systems and methods for sharing of execution plans for similar SQL statements overcome the disadvantages discussed above by reusing the execution plan of an existing cursor in those situations where a client issues a SQL statement similar to another SQL statement previously compiled*);) and

"when there is a march between the data in the application structure and the data in the optimization information in the bind-in structure, executing the statement with the optimization information" (Column 4 Line 3-6, i.e., *If so, a soft parse is preformed, and then the execution plan of the existing cursor is shared/reused for the current SQL statement to void performing a hard parse*).

When executing a statement, the method of Kaluskar compares the SQL statement presently being processed with an existing cursor which corresponds to a first SQL statement and when there is a match between the SQL statement presently being processed with an existing cursor which corresponds to a first SQL statement, executing the statement with the execution plan of the existing cursor (Kaluskar, Column 4 Line 3-6, i.e. "If so, a soft parse is preformed, and then the execution plan of the existing cursor is shared/reused for the current SQL statement to void performing a hard parse").

Note that Kaluskar discloses that type conversion is involved in a hard parse (Kaluskar Column 2 Line 62 through Column 3 Line 2, i.e., The *type checking stage 125 engages data type resolution between a client process and a server process, which* *verifies and corrects data type incompatibilities that can exist.*) and the result of a hard parsing process is a data structure in the memory which dictates to the server the best method for carrying out the database statement request (Kaluskar, Column 3 Line 15-26). A cursor is one example of such a data structure and that is a handle to the memory location where the details and results of a parsed and optimized database statement resides (Kaluskar, Column 3 Line 15-26). Therefore it is inherent that type conversion information (*optimization information in a bind-in structure*) is also included in the said data structure. However, Kaluskar does not explicitly disclose that type conversion information is included in the recycled/reused execution plan of an existing cursor.

Therefore, Kaluskar does not explicitly teach the limitation:

"when performing bind-in of host variables".

Crone teaches the limitation:

"when performing bind-in of host variables" (Crone, Column 5Line 24-57). Referring to the definition of *parameter binding* above, it is pointed out that parameter binding involves *a process of validating, converting, and moving data either to or from an application program input or output parameters.* Crone teaches validation and type conversion in column 5 Lines 24-57).

At the time the invention was made, it would have been obvious to a person of ordinary to combine the method and system of Kaluskar for reusing execution plans/cursors with the method and system taught by Crone for type conversions employing function modules so that, when executing a statement, the combined method and system would constitute a parameter binding method and system which compares data in an application structure of the statement with optimization information in bind-in structure (*a memory resident data structure*, Kaluskar Column 3 Line 15-21) and, when there is a match, would execute the statement with optimization information (i.e. using an existing execution plan of an existing cursor). One would have been motivated to do so in order that *to optimize the operations on a specific data type* (Crone Column 5 Line 44-46. i.e. *The motivation for this organization is to optimize the operations on a specific data type*).

Referring to claim 2, Kaluskar teaches the limitation:

"when there is not a match between the data in the application structure and the optimization information, regenerating optimization information" (Column 3 Line 57-64, i.e., *If a match is not found, then compilation proceeds as in Fig. 1*).

Referring to claim 3, Kaluskar teaches the limitation:

"at bind time, storing the optimization information in the bind-in structure" (Column 3 Line 15-21, i.e., *a memory resident data structure*).

Referring to claim 4, Kaluskar in view of Crone teaches the limitations:

"wherein the optimization information includes at least one of data type, length, Coded Character Set Identifier, an array size, an indication of whether conversions are required, and an indication of whether the required conversions are valid" (Kaluskar

Column 2 Line 62 through Column 3 Line 2, i.e. *The type checking stage 125 engages data type resolution between a client process and a server process, which verifies and corrects data type incompatibilities that can exist."* and Crone, Column 5Line 24-57).

Referring to claim 9, Kaluskar teaches the limitation:

"when returning a handle to a cursor to a result set from a stored procedure to an application, recalculating the optimization information" (Column 3 Line 57-64, i.e., *If a match is not found, then compilation proceeds as in Fig. 1*). Note that when a stored procedure returns a cursor to a result set to an application, said cursor will be a new cursor in the method and system of Kaluskar in view of Crone and it would have been calculated/generated as new following the conventional way of hard parsing. In the specification of this application, such situation arises when the caller of the stored procedure is a distributed application, which does not provide a SQLDA (Specification, Paragraph 0074).

Claim 9, 10, 11, 12, 13, and 18 are rejected on the same basis as claim 1, 2, 3, 4, and 9 respectively.

Claim 19, 20, 21, 22, and 27 are rejected on the same basis as 1, 2, 3, 4, and 9 respectively.

Claim 28, 29, 30, 31, and 36 are rejected on the same basis as 1, 2, 3, 4, and 9 respectively.

Claim 37 and 38 are rejected on the same basis as claim 1.

6. Claim 5, 14, 23, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaluskar in view of Crone and further in view of Desai et al., (hereinafter "Desai") (U.S. Patent Number 6567816).

Referring to claim 5, Kaluskar in view of Crone does not explicitly disclose the limitations: "for fixed length data, storing an increment length by which a data pointer that is pointing to data in an application program area is to be incremented to find a location of an next data value and calculating the location of the next data value by adding the increment length to the data pointer."

Desai teaches the limitations:

"for fixed length data, storing an increment length by which a data pointer that is pointing to data in an application program area is to be incremented to find a location of an next data value and calculating the location of the next data value by adding the increment length to the data pointer" (Column 5 Line 34-49). Desai teaches a method and system for extracting data from database records, wherein offsets from the starting of the row in memory are used to determine corresponding column name by adding to the said column offset the length of fixed columns (Column 5 Line 34-49).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art of add the feature of employing offsets (increments) to locate (point to) next column (item/record) as taught by Desai to the method and system taught by Kaluskar in view of Crone so that the resultant method would constitute the method of claim 1, which further comprises, for fixed length data, storing an increment length by which a data pointer that is pointing to data in an application program area is to be incremented to find a location of a next data value and calculating the location of the next data value by adding the increment length to the data pointer. One would have been motivated to do so simply to locate a memory location, which is well known in the art.

Claim 14, 23, and 32 are rejected on the same basis as claim 5.

7. Claim 6-8, 15-17, and 24-26, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaluskar in view of Crone and further in view of Jordan II et al. (hereinafter "Jordan") (U.S. Patent Number 5875442).

Referring to claim 6, Kaluskar in view of Crone does not explicitly disclose the limitation: "for distributed computing, at a client computer, calculating a location of data in a client communications buffer".

Jordan teaches the limitation:

""for distributed computing, at a client computer, calculating a location of data in a client communications buffer" (Figure 3 and Column 4 Line 12-29). Jordan teaches a method and system for accessing a remote database, wherein location of data in communication buffer are calculated (Figure 3 and Column 4 Line 12-29).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of calculating memory location in a communication buffer as taught by Jordan II. et al. to the method and system of Kaluskar in view of Crone as applied to claim 1 above so that the resultant method would further comprise, for distributed processing, at a client computer, calculating a location of data in a client communications buffer. One would have been motivated to do so in order to *provide dynamic buffering to enhance a database server*" (Jordan, Column 1 Line 26-29).

Claim 7 and 8 are rejected on the same basis as claim 6.

Claims 15-17 are rejected on the same basis claim 6-8 respectively.

Claims 24-26 are rejected on the same basis claim 6-8 respectively.

Claims 33-35 are rejected on the same basis claim 6-8 respectively.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Myint whose telephone number is (571) 272-5629. The examiner can normally be reached on 8:30AM-5:30PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dennis Myint AU-2162

Primary Examiner
Cam Y Truong